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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,429	09/10/2004	Hisaji Oyake	890050.503USPC	6263

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EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT

PAPER NUMBER

1756

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/05/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/507,429

Applicant(s)

OYAKE ET AL.

Examiner

Martin J. Angebrannt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 1/9/07 & 11/20/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,9,10,12-14 and 19-35 is/are pending in the application.
- 4a) Of the above claim(s) 27-35 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3,9 & 13 is/are allowed.
- 6) ☒ Claim(s) 10,12,19-21,24 and 25 is/are rejected.
- 7) ☒ Claim(s) 14,22,23 and 26 is/are objected to.
- 8) ☒ Claim(s) 1,3,9,10,12-14 and 19-35 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 1/9/07.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

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1. The restriction requirements of the previous office action is incorporated by reference here. The response of the applicant of the office action has been read and given careful consideration. Responses to those arguments are presented after the first rejection to which they are directed. Rejections of the previous office action not repeated below are withdrawn.

The examiner would like to point out that it has been held in the courts that the “applicant has [an] obligation to call the most pertinent prior patent to [the] attention of [the] Patent Office in a proper fashion.” [Penn Yan Boats, Inc. V. Sea Lark Boats, Inc., et al. 175 USPQ 260 (DC SFla 1972)]. The examiner would appreciate the applicant identifying why the cited reference is pertinent including relevant portions of the document cited. The examiner wishes to make the applicant aware of a potential legal liability incurred by the submission of the large IDS of 1/9/07 and suggests that they discuss this with legal counsel.

2. Applicant’s election of group I, claims 1-26 in the reply filed on 5/31/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

3. Claims 27-35 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 5/31/06.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 21 and 25 are rejected under 35 U.S.C. 102(b) as being fully anticipated by

Takeuchi JP 09-231569 (machine translation attached).

The formation of prepits using laser pulses is illustrated in figure 1, where the 3 and 4 T pulses are formed with a duty cycle of 100% and the 5 and 14T pulses each have a lower duty cycle across the pulse, with the duty cycle of the 5T pulse only having one off cycle and the 14T pulse having 3, so the duty cycle of the 14T pulse is the lowest. An optical disk is formed by coating a substrate with a photoresist, irradiating it according to the desired pulse sequence, development of the resist, and the formation of a metal mold via electroforming to produce a metal master which has the opposite polarity of the resist pattern which is then used to form the disk substrate [0002]. Embodiment 1 uses a photoresist coating glass substrate and a modulated argon ion laser and the exposure conditions refer to figure 1 [0011-0016]. The duty cycle within the pulse sequence used to form the pits is constant. This allows the formation of more accurate and pit sizes. (abstract and [0007])

The examiner holds that the teachings of the subsequent use of the photoresist master to form a stamper and using it to form an optical recording medium substrate in section [0002] and

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no other subsequent processing allows one to immediately envision the addition of these steps to the process set forth in embodiment 1, thereby anticipating the claimed invention.

The applicant argues that for the 3T and 4T pulses, only one laser pulse is used to form the areas. The examiner holds that the claims are met by the teachings of multipulse exposure for the 5T and 14T pulses and that the claims are open to other pulses being formed using single pulse exposure due to the open "Comprising" language and as the claims only recite actively a single exposure and the multiple pulses can be for forming two different pits as these are within the bounds of the claims. The rejection stands.

The examiner agrees with the analysis relating to the language of claims 1,3,9,13,22,23 which recite the variation of the duty cycle below a certain pit length and the duty cycle being constant for pit lengths above the certain pit length and that the prior art does not teach this. Further the examiner holds that for the duty cycle to be varied more than a single pulse length would have to be below the threshold pit length and similarly for the duty ratio to be independent of the pit length more than one pit length would have to have the same duty cycle.

7. Claims 10,12,19-21 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi JP 09-231569, in view of either Oyake et al. '312 or Oyake et al. WO 02/069336.

Oyake et al. '312 teach in examples 1, the formation of a stamper having grooves therein, where the substrate is coatings with a light absorbing composition, a photoresist, this is then exposed using a Kr ion laser, the photoresist developed and a nickel master formed from it [0051-0055]. The use of the stamper to form optical recording medium substrate and the formation of masters with pits for read only media is disclosed. [0004-0005]. (N.B. this

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application was abandoned) The presence of the light absorbing layer is demonstrated to improve the exposure pattern.

Oyake et al. WO 02/069336 teach in examples 1, the formation of a stamper having grooves therein, where the substrate is coatings with a light absorbing composition, a photoresist, this is then exposed using a Kr ion laser, the photoresist developed and a nickel master formed from it (10/20-11/16). The use of the stamper to form optical recording medium substrate and the formation of masters with pits for read only media is disclosed. (1/14-2/24). The presence of the light absorbing layer is demonstrated to improve the exposure pattern.

It would have been obvious one skilled in the art to modify Takeuchi JP 09-231569 by adding a light absorbing layer as taught by either Oyake et al. '312 or Oyake et al. WO 02/069336 with a reasonable expectation of gaining the benefits ascribed to this, specifically the improved exposure pattern.

The claims stands rejected for the reasons above.

8. Claims 10,12,19-21 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi JP 09-231569, in view of either Mizuta JP 04-263140 or Sato et al. '510.

Mizuta JP 04-263140 teaches the formation of an interferometric film which absorbs the light and prevents reflection from the glass substrate surface. (abstract). The examiner does not have a translation of this references, if the applicant has a copy or has one made, the examiner would appreciate a copy with the subsequent response).

Sato et al. '510 teaches in example 1, an undercoating comprising a melamine, together with 4,4'-bis(diethylamino)benzophenone, 2,2',4,4'-tetrahydroxybenzophenone together with a surfactant in a solvent, which is coated onto a silicon wafer and heated to form an undercoating

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layer of 100 nm thick. A photoresist was then coated over this to a thickness of 1000 nm (11/35-12/5). This experienced no intermixing of the layers, no notching and was able to provide a good antireflective effect. (table 1). 2,2',4,4'tetrahydroxybenzophenone is disclosed as a crosslinking promoter (8/35-40). The benzophenone compounds are disclosed as having high UV absorption properties. (4/4-48). The undercoating is specifically designed to minimize the effects of reflections from the substrate. (abstract).

It would have been obvious to one skilled in the art to modify the process of Takeuchi JP 09-231569 by adding an antihalation layer, such as that taught by either Mizuta JP 04-263140 or Sato et al. '510 to prevent inadvertent exposure by reflection with a reasonable expectation of achieving the results. The examiner notes that the materials disclosed by the applicant as co-initiators are known to be useful in forming anti-halation layers used with photoresists.

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re*

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*Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 10,12,19-21 and 24-25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-25 of copending Application No. 10/495746 (US 2005/0006336), in view of Takeuchi JP 09-231569.

It would have been obvious to modify the claimed process by using a multipulse mastering process such as taught by Takeuchi JP 09-231569 to gain the benefits of more accurate pit sizes ascribed by Takeuchi JP 09-231569 to the use of this technique.

This is a provisional obviousness-type double patenting rejection.

The examiner has reviewed the current claims in this case and holds that the rejection is proper at this time for the reasons above, although the claims may diverge in the future.

11. Claims 10,12,19-21 and 24-25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 and 13-16 of copending Application No. 10/493301 (US 2004/0259039), in view of Takeuchi JP 09-231569.

It would have been obvious to modify the claimed process by using a multipulse mastering process such as taught by Takeuchi JP 09-231569 to gain the benefits of more accurate pit sizes ascribed by Takeuchi JP 09-231569 to the use of this technique.

This is a provisional obviousness-type double patenting rejection.



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The examiner has reviewed the current claims in this case and holds that the rejection is proper at this time for the reasons above, although the claims may diverge in the future.

12. Claims 10,12,19-21 and 24-25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2 of copending Application No. 10/500816 (US 2005/0039621), in view of Takeuchi JP 09-231569.

It would have been obvious to modify the claimed process by using a multipulse mastering process such as taught by Takeuchi JP 09-231569 to gain the benefits of more accurate pit sizes ascribed by Takeuchi JP 09-231569 to the use of this technique.

This is a provisional obviousness-type double patenting rejection.

The examiner has reviewed the current claims in this case and holds that the rejection is proper at this time for the reasons above, although the claims may diverge in the future.

The examiner notes that this case has been allowed and therefore the provisional nature of this rejection may be withdrawn in the next communication.

13. Claims 10,12,19-21 and 24-25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/500719 (US 2005/0042427), in view of Takeuchi JP 09-231569.

It would have been obvious to modify the claimed process by using a multipulse mastering process such as taught by Takeuchi JP 09-231569 to gain the benefits of more accurate pit sizes ascribed by Takeuchi JP 09-231569 to the use of this technique.

This is a provisional obviousness-type double patenting rejection.

The examiner has reviewed the current claims in this case and holds that the rejection is proper at this time for the reasons above, although the claims may diverge in the future.

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14. Claims 10,12,19-21 and 24-25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2 of copending Application No. 10/500008 (US 2005/0066825), in view of Takeuchi JP 09-231569.

It would have been obvious to modify the claimed process by using a multipulse mastering process such as taught by Takeuchi JP 09-231569 to gain the benefits of more accurate pit sizes ascribed by Takeuchi JP 09-231569 to the use of this technique.

This is a provisional obviousness-type double patenting rejection.

The examiner has reviewed the current claims in this case and holds that the rejection is proper at this time for the reasons above, although the claims may diverge in the future.

15. Claims 10,12,19-21 and 24-25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2 of copending Application No. 10/500893 (US 2005/0118534), in view of Takeuchi JP 09-231569.

It would have been obvious to modify the claimed process by using a multipulse mastering process such as taught by Takeuchi JP 09-231569 to gain the benefits of more accurate pit sizes ascribed by Takeuchi JP 09-231569 to the use of this technique.

This is a provisional obviousness-type double patenting rejection.

The examiner has reviewed the current claims in this case and holds that the rejection is proper at this time for the reasons above, although the claims may diverge in the future.

16. Claims 10,12,19-21 and 24-25 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 16-20 of copending Application No. 10/515404 (US 2005/0232130), in view of Takeuchi JP 09-231569.

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It would have been obvious to modify the claimed process by using a multipulse mastering process such as taught by Takeuchi JP 09-231569 to gain the benefits of more accurate pit sizes ascribed by Takeuchi JP 09-231569 to the use of this technique.

This is a provisional obviousness-type double patenting rejection.

17. Claims 1,3,9 and 13 are allowable over the prior art for the reasons discussed above.

18. Claims 14, 22,23, and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebrannndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Martin J. Angebranndt  
Primary Examiner  
Art Unit 1756

2/1/2007